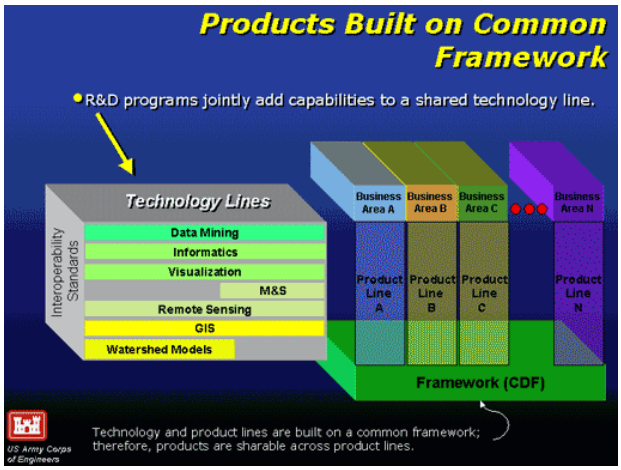
US Army Corps of Engineers®
Engineer Research and Development Center

Common Delivery Framework (Research)

Problem

The technology push today deals with how to consolidate information in a way to improve the business process. Industry's acceptance of the Web as the information delivery pipeline has sparked the technology industry to develop middleware standards that describe how information is located and shared over the Web. These Web-based technologies address interoperability and security and provide the baseline for all systems, new and old, to work together to improve how technology and information are delivered to customers, business partners, and employees. Industry has fully embraced the standard means of supporting interoperability. Typically, they use the trendy term "framework." However, the focus of industry is to provide a broad set of capabilities that can be applied to many business areas. The CDF molds these capabilities into a common approach that the U.S. Army Corps of Engineers (USACE) applies to technology delivery.



Description

The Common Delivery Framework (CDF) is an ongoing research and development (R&D) initiative that focuses on improving reuse and integration of science and engineering (S&E) tools, models, and data. The CDF defines the guidance, standards, and conventions as well as the sharable functionality through common software libraries and services needed to improve how technology is delivered and inserted.

Expected Products

- Web-based Framework for S&E, including standards, technical guidance, architecture, metadata, security, hosting, etc. (i.e., how we Web-enable/integrate our S&E products).
- S&E DataNet, a Web-centric environment for acquiring, managing, and sharing S&E data.
- S&E Data Browsing and Data Fusion capabilities assist users in accessing/preprocessing the data available via the DataNet.
- Standard format and programming interface for multidimensional model data (XMDF).
- ArcGIS V9 and S&E modeling integration.
- ArcGIS V9 connectivity to the DataNet.
  - Development of ArcGIS extensions to access the DataNet.
  - Incorporation of ArcGIS Web Mapping service.
- Interoperability standards for connecting AISs and internal/external sources.
- Integration of USACE desktop environment with HPC assets.
- Web portal integration into S&E (focus on reusable components that deliver content and serve as gateways to computational and data resources).
- Web-based approach to managing and locating unstructured data (.doc, .ppt, .avi, .txt, .jpg, etc.).
- Metadata registry that describes the content and interfaces to S&E data sources.
- Formalizing data sharing agreements with USGS, NOAA, and EPA.

Potential Users

USACE engineers and scientists.

Projected Benefits

The CDF provides the operational platform to achieve cost reductions and improved customer service through integration of technical approaches, managed reuse of component capabilities, and interoperability of data and tools. CDF benefits include

- Increased reuse of common capabilities through Web services.
- Cost and planning efficiencies.
  - Software development and sustainment.
  - Infrastructure (hardware).
- Improved access to and sharing of data sources managed by other Federal agencies.
- Improved access to and sharing of Corps data sources that span Division/District boundaries.
- Reduced effort in locating, analyzing, and packaging data.
- Formal integration of the Web, decision support, and modeling tools.
- Ease of transitioning new capabilities into Corps business practices.
- Improved access to high performance computing resources.
- Increased sharing of multidimensional model data..

Program Manager

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Participating ERDC Laboratories

Information Technology Laboratory